**SNC1P – Exam Review: ECOLOGY**

1. Define the following terms:

|  |  |  |
| --- | --- | --- |
| Biotic factors | Producer | Biodiversity (more by equator) |
| Abiotic factors | Consumer | Pest |
| Niche | Extinct | Pesticide |
| Herbivore (second trophic level) | Endangered | Habitat |
| Carnivore | Extirpated | Ecosystem |
| Omnivore | Invasive Species | Food Chain & Food Web |
| Photosynthesis | Competition | Population |
| Insecticide | Atmosphere | Biosphere |

1. Explain the difference between abiotic and biotic factors. List 2 examples of each.
2. What are producers/consumers and how do they relate to each other? What are the different types of consumers?
3. Describe the carbon and water cycle.
4. Draw a food chain.
5. Write the word equation for Photosynthesis
6. Write the word equation for Cellular Respiration
7. What are 3 ways humans can affect the carrying capacity of an ecosystem? Explain.
8. Consider the following food web:

grass moose wolves crows



coyotes

**Table 1.** Consequences of removing the wolf population from the food web.

|  |  |  |
| --- | --- | --- |
| **Population affected** | **Increase or decrease?** | **Explanation** |
| Coyote |  |  |
| Moose |  |  |
| Grass |  |  |
| Crow |  |  |

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_What is the source of energy for organisms on Earth? (p. 38)

11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How much of the Sun’s energy warms the surface of the

Earth?

12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How much of the Sun’s energy is actually used by green

plants to make food?

13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How much of the Sun’s energy is reflected by clouds or

the Earth’s surface?

**Table 2.** Energy transfer in food chains. (p. 44)

|  |  |  |  |
| --- | --- | --- | --- |
| **Energy level** | **Producer, primary consumer,**  **or secondary consumer?** | **Plant, herbivore, or carnivore?** | **Most energy, lesser energy, or least energy? (p. 24.)** |
| 3rd tropic level |  |  |  |
| 2nd tropic level |  |  |  |
| 1st tropic level |  |  |  |

14. Carbon dioxide (CO2) is the form of carbon in the atmosphere. How is carbon dioxide released into the atmosphere? (p. 50)

15. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ What is the term for chemicals designed to kill

pests? (p. 139)

16. Describe three ways that pesticides are beneficial. (p. 139)

**SNC1P – Exam Review: CHEMISTRY**

1. Define:

|  |  |  |
| --- | --- | --- |
| Solution | Malleability | Compound |
| Mechanical Mixture | Ductility and hardness | Density |
| Pure Substance | Metal | Lustre |
| Physical Change | Non metal | States of matter |
| Chemical Change | Metalloid | Conductivity |
| Viscosity | Atom | Precipitate |
| Halogens | Noble Gases | Bohr-Rutherford Diagram |

1. Place a (P) beside the **properties** that are physical and (C) beside the **properties** that are chemical.

\_\_\_\_ A. Blue Colour

\_\_\_\_ B. A new chemical is produced when placed in water.

\_\_\_\_ C. Melting point.

\_\_\_\_ D. Changes state from a solid to a liquid.

\_\_\_\_ E. Sour Taste.

1. Describe 3 clues that would indicate that a chemical change has taken place
2. Place a (P) beside the changes that are physical and (C) beside the changes that are chemical.

\_\_\_\_ A. Cutting up apples.

\_\_\_\_ B. Burning of wood.

\_\_\_\_ C. Freezing water on a pond.

\_\_\_\_ D. Rusting of a nail.

\_\_\_\_ E. Baking a cake.

\_\_\_\_ F. Bending a paper clip

1. What is the difference between a metal and a non metal? Use terms such as appearance, conductivity, and malleability.
2. Fill in the following chart:

|  |  |  |
| --- | --- | --- |
| Particle | Location | Charge |
| Protons |  |  |
|  |  | Neutral |
|  | Orbit around the nucleus |  |

1. Complete the following table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Element | Atomic # | Mass # | Protons | Neutrons | Electrons | Bohr Diagram |
| Hydrogen |  |  |  |  |  |  |
|  | 19 |  |  |  |  |  |
|  |  | 27 |  |  |  |  |
|  |  |  | 5 |  |  |  |
|  |  |  |  | 16 | 16 |  |
|  |  |  |  | 8 |  |  |

1. How many atoms are in CO2?
2. Draw the Bohr-Rutherford Diagram for:
3. Sodium c) Oxygen
4. Chlorine d) Helium
5. What group number are the following:
6. Alkali Metals c) Halogens
7. Alkaline Earth metals d) Noble Gases

**SNC1P – Exam Review: ELECTRICITY**

1. Define:

|  |  |  |
| --- | --- | --- |
| Electric Charge | Conductor | Series circuit |
| Static electricity and friction | Insulator | Parallel circuit |
| Current electricity | Non-renewable energy source | Ammeter |
| Law of electric charges | Renewable energy source | Voltmeter |
| Charging by friction | Efficiency | Ohmmeter |
| Charging by induction | Electric circuit | Resistance |
| Charging by contact | Load | Voltage |
| Grounding | Switch | Current |
| Neutral/Positive/Negative Object | Repel/Attract | Brightness |

1. Discuss 3 methods of charging a neutral object (by friction, contact, and induction). Provide examples of each.
2. What are the units for **voltage, current, and resistance?**
3. Describe what happens when a **negatively** charged object touches a neutral pith ball? Include a diagram.
4. What does the **Law of Electric Charges** state?
5. What is **grounding?** Include a diagram.
6. What instrument is used to measure **current, voltage, and resistance?**
7. What is the difference between parallel and series circuits? Draw an example of each.
8. Explain what happens when one bulb **burns out** in a series circuit. What about in a parallel circuit?
9. What is the difference between an insulator and a conductor?
10. What is the difference between a renewable and a non-renewable energy source? Provide an example of each.
11. What are 3 different forms of energy that we convert electrical energy into?
12. An appliance runs for 3 hours a day everyday for a year. It uses 400 W/h. If electricity costs $0.10/kW, how much will it cost to run the appliance for a year?
13. Draw a circuit with a battery, 3 light bulbs and an open switch in series.
14. Draw a circuit with a battery, 3 light bulbs in parallel and include a switch that turns off only ONE light bulb.
15. Draw a battery, an open switch, 2 light bulbs and a device to measure current in series.
16. What is Ohm’s law? Explain how current and voltage differ in Parallel and Series circuits.
17. Complete the following table:

|  |  |  |
| --- | --- | --- |
| **Resource** | **Advantages** | **Disadvantages** |
| Fossil Fuels |  |  |
| Nuclear Power |  |  |
| Hydroelectric |  |  |
| Wind |  |  |
| Solar |  |  |

**SNC1P – Exam Review: ASTRONOMY**

1. Define:

|  |  |  |
| --- | --- | --- |
| Celestial Object | Star an nuclear fusion | Luminous |
| Planet | Orbit | Solar system |
| Galaxy | Universe | Terrestrial planets |
| Gas giants | Light year | Astronomical unit (AU) |
| Sunspot | Solar Flare | Solar Wind |
| Aurora | Star cluster | Geocentric Model |
| Heliocentric model | Meteoroid | Asteroid and asteroid belt |
| Meteor | Comet | Revolution |
| Rotation | Phases of the moon | Waxing |
| Waning | Solar Eclipse | Lunar Eclipse |

1. What are the 4 characteristics a celestial object needs to be classified as a planet?
2. Why is Pluto no longer considered a planet?
3. What is the order of the 8 planets in our solar system?
4. Which 4 planets are terrestrial, and which 4 planets are gas giants?
5. What is a galaxy? What is the name of our galaxy? What is the shape of our galaxy?
6. Fill in the correct planet given the following descriptions:
7. Smallest planet
8. Largest planet
9. Planet that orbits the Sun the fastest
10. Planet that orbits the Sun the slowest
11. Planet closest to the Sun
12. Planet furthest away from the Sun
13. Planet that is most similar to Earth
14. Rotates on a horizontal axis (on it’s side)
15. Planet that has the most moons
16. Planet that does not have an atmosphere
17. Red planet
18. What is a light year? How many km/s is a light year? What is a light year used to measure?
19. What colour are the hottest stars? What colour are the coolest stars?
20. What colour is our Sun? Is it classified as hot or cool?
21. What is the temperature of the core of our Sun?
22. What are sunspots? What are solar flares?
23. What is the difference between the geocentric model and the heliocentric model?
24. What is an astronomical unit (AU)? How many kms is 1 AU?
25. What is the difference between rotation and revolution? How many days does it take the Earth to revolve around the Sun? How long does it take for the Earth to complete one rotation?
26. Why is the Eastern part of the world further ahead in the day than we are?
27. How long does it take the moon to revolve around the Earth?
28. What are the phases of the moon in order from new moon?
29. What is the name of the space station orbiting Earth?
30. What is the difference between a solar eclipse and a lunar eclipse? Use 2 diagrams to show your answer.
31. Give one challenge with space travel and explain why it is a challenge. How is it overcome/solved?